

CLAIMS

1. A control system for a turbo-charged diesel aircraft engine comprising a throttle lever, a fuel setting device that sets the target amount of fuel  
5 supplied to the engine in accordance with the amount of stroke of the throttle lever, a boost compensator that sets the maximum limit for the amount of fuel supplied to the engine in accordance with the boost pressure of the engine and a fuel supply device that supplies fuel to the  
10 engine in an amount equal to the target amount or the maximum limit whichever is smaller, wherein the system further comprises:

operating condition determining means for determining whether the current aircraft operating  
15 condition is a condition where the rate of increase in the engine output power should be increased; and

a switching means for increasing the maximum limit set by the boost compensator when it is determined by the operating condition determining means  
20 that the current operating condition is a condition where the rate of increase in the engine output power should be increased.

2. The control system for a turbo-charged diesel aircraft engine, as set forth in claim 1, wherein the  
25 boost compensator comprises a boost pressure chamber, to which a boost pressure of the engine is introduced, a backpressure chamber the pressure thereof being maintained at a value different from the boost pressure, the boost compensator setting the maximum limit for the  
30 fuel supplied to the engine to a value determined in accordance with the difference between the boost pressure chamber and the backpressure chamber and,

the switching means maintaining the pressure in the backpressure chamber of the boost  
35 compensator at a predetermined first pressure when it is determined that the current operating condition of the aircraft is not a condition where the rate of increase in

the engine output power should be increased and increases the maximum limit for fuel supplied to the engine by changing the pressure in the backpressure chamber from the first pressure to a predetermined second pressure when it is determined that the current operating condition of the aircraft is the condition where the rate of increase in the engine output power should be increased.

3. The control system for a turbo-charged diesel aircraft engine, as set forth in claim 1, wherein the operating condition determining means comprises change rate detecting means for detecting the rate of change in the stroke of the throttle lever and determines that the current operating condition is a condition where the rate of increase in the engine output power should be increased when the rate of change in the stroke of the throttle lever is larger than a predetermined value.

4. The control system for a turbo-charged diesel aircraft engine, as set forth in claim 1, wherein the operating condition determining means comprises a position detecting switch that detects that the throttle lever is moved to a predetermined position and determines that the current operating condition is a condition where the rate of increase in the engine output power should be increased when the throttle lever is moved to the predetermined position.

5. The control system for a turbo-charged diesel aircraft engine, as set forth in claim 1, wherein the operating condition determining means comprises a change-over switch and determines that the current operating condition is a condition where the rate of increase in the engine output power should be increased when the change-over switch is manually activated by the pilot of the aircraft.

6. The control system for a turbo-charged diesel aircraft engine, as set forth in claim 5, wherein the change-over switch is a go-around switch used for

canceling an autopilot system of the aircraft when a landing operation is to be aborted, and the operating condition determining means determines that the current operating condition is a condition where the rate of  
5 increase in the engine output power should be increased when the go-around switch is activated in order to cancel the autopilot system.

7. The control system for a turbo-charged diesel aircraft engine, as set forth in claim 1, wherein the  
10 operating condition determining means comprises a landing determining means for determining whether the aircraft is in the air or on the ground and determines that the current operating condition is a condition where the rate of increase in the engine output power should be  
15 increased when it is determined that the aircraft is in the air.

8. The control system for a turbo-charged diesel aircraft engine, as set forth in claim 7, wherein the operating condition determining means further comprises  
20 an altitude detecting sensor that detects the flight altitude of the aircraft and determines that the current operating condition is a condition where the rate of increase in the engine output power should be increased when it is determined that the aircraft is in the air and  
25 the flight altitude is lower than a predetermined altitude.

9. The control system for a turbo-charged diesel aircraft engine, as set forth in claim 8, wherein the operating condition determining means further comprises a  
30 true air speed sensor that detects the flight speed of the aircraft and determines that the current operating condition is a condition where the rate of increase in the engine output power should be increased when it is determined that the aircraft is in the air and that the  
35 flying altitude is lower than a predetermined altitude and that the flight speed of the aircraft is lower than a predetermined speed.

10. The control system for a turbo-charged diesel aircraft engine, as set forth in claim 2, wherein the operating condition determining means comprises change rate detecting means for detecting the rate of change in the stroke of the throttle lever and determines that the current operating condition is a condition where the rate of increase in the engine output power should be increased when the rate of change in the stroke of the throttle lever is larger than a predetermined value.

11. The control system for a turbo-charged diesel aircraft engine, as set forth in claim 2, wherein the operating condition determining means comprises a position detecting switch that detects that the throttle lever is moved to a predetermined position and determines that the current operating condition is a condition where the rate of increase in the engine output power should be increased when the throttle lever is moved to the predetermined position.

12. The control system for a turbo-charged diesel aircraft engine, as set forth in claim 2, wherein the operating condition determining means comprises a change-over switch and determines that the current operating condition is a condition where the rate of increase in the engine output power should be increased when the change-over switch is manually activated by the pilot of the aircraft.

13. The control system for a turbo-charged diesel aircraft engine, as set forth in claim 12, wherein the change-over switch is a go-around switch used for canceling an autopilot system of the aircraft when a landing operation is to be aborted, and the operating condition determining means determines that the current operating condition is a condition where the rate of increase in the engine output power should be increased when the go-around switch is activated in order to cancel the autopilot system.

14. The control system for a turbo-charged diesel

aircraft engine, as set forth in claim 2, wherein the operating condition determining means comprises a landing determining means for determining whether the aircraft is in the air or on the ground and determines that the  
5 current operating condition is a condition where the rate of increase in the engine output power should be increased when it is determined that the aircraft is in the air.

15. The control system for a turbo-charged diesel  
10 aircraft engine, as set forth in claim 14, wherein the operating condition determining means further comprises an altitude detecting sensor that detects the flight altitude of the aircraft and determines that the current operating condition is a condition where the rate of  
15 increase in the engine output power should be increased when it is determined that the aircraft is in the air and the flight altitude is lower than a predetermined altitude.

16. The control system for a turbo-charged diesel  
20 aircraft engine, as set forth in claim 15, wherein the operating condition determining means further comprises a true air speed sensor that detects the flight speed of the aircraft and determines that the current operating condition is a condition where the rate of increase in  
25 the engine output power should be increased when it is determined that the aircraft is in the air and the flying altitude is lower than a predetermined altitude and the flight speed of the aircraft is lower than a predetermined speed.